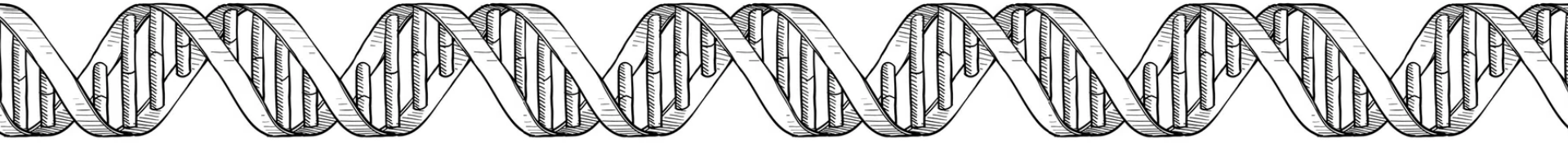


Landscape genomics and full pedigrees - the future of evaluating pest management programs



Dr Andrew Veale, Wildlife Ecologist: Manaaki Whenua Landcare Research

The stoat genome





Waiheke stoat genetics



Te Korowai o Waiheke
TOWARDS PREDATOR FREE WAIHEKE







Legend

Stoat Trap Locations TKOW

- DDC 200 Double
- DDC 200 Single
- DDC 200 Single white

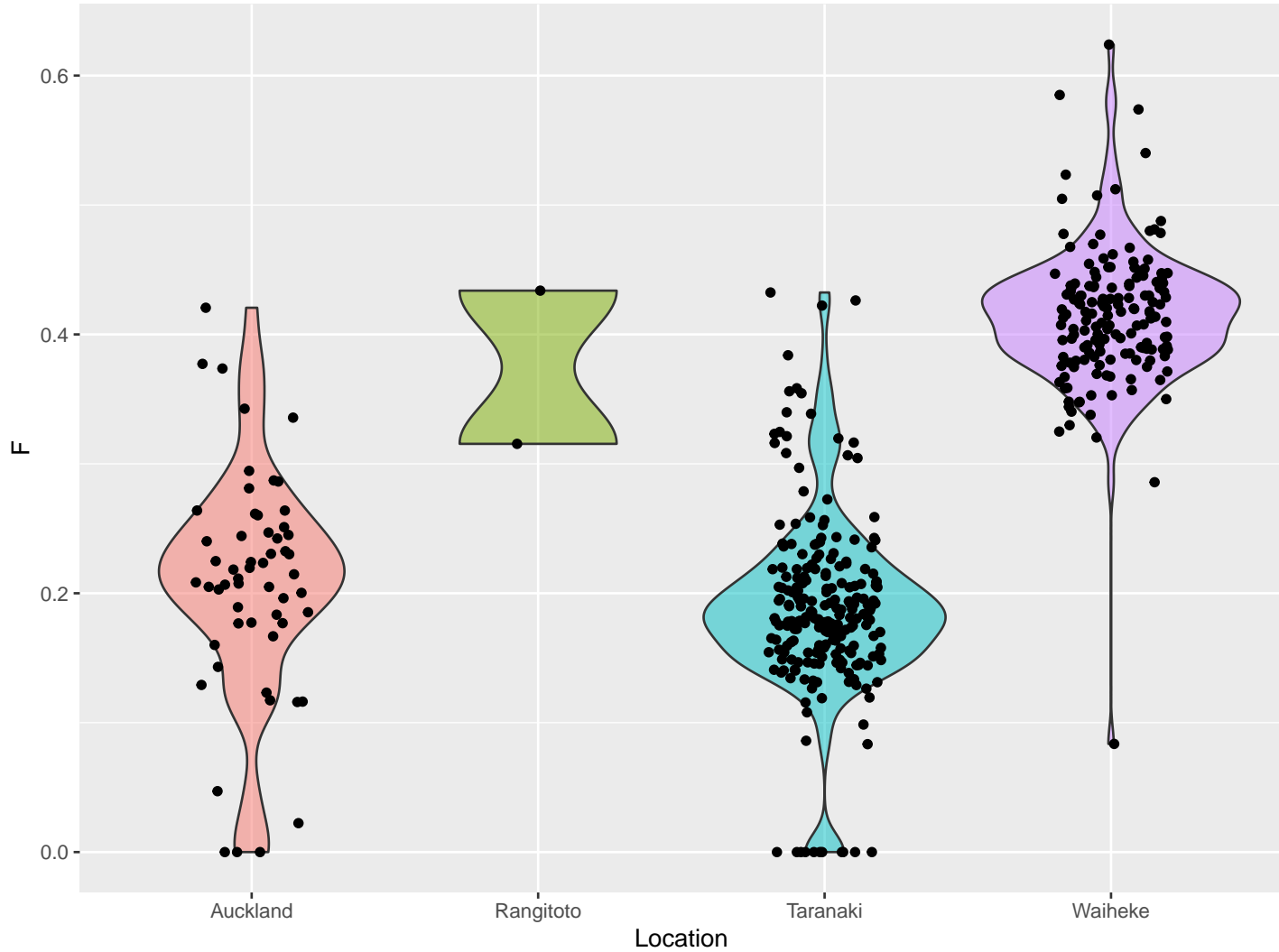
0 1 2 km



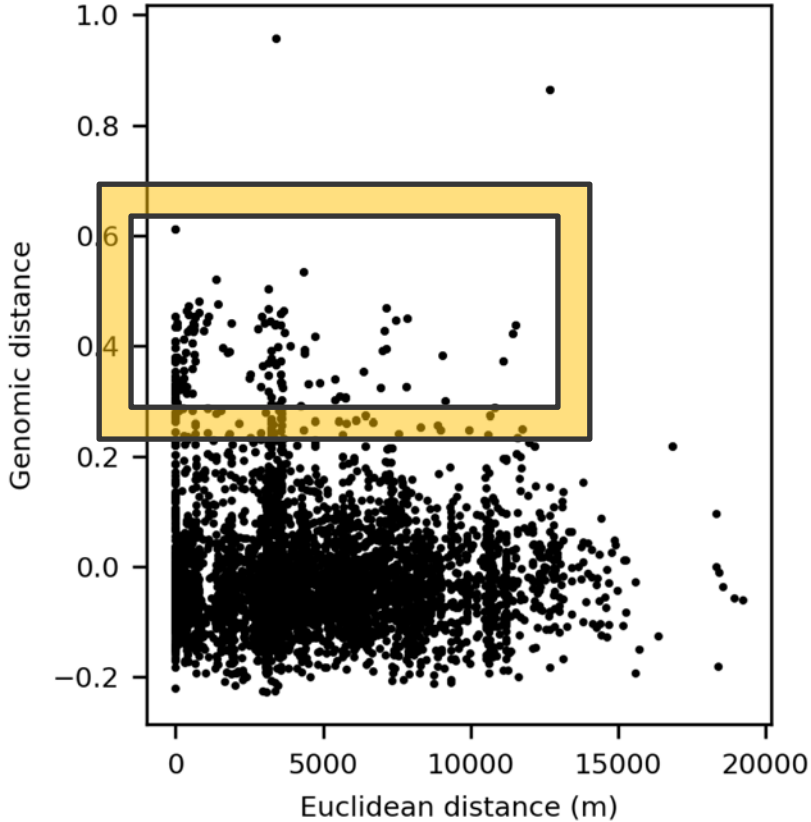
Te Korowai o Waiheke
TOWARDS PREATOR FREE WAIAHEKE

Te Korowai o Waiheke
Author: Paul Kowalik
Source: Auckland Council, Google Maps 2020, LINZ Creative Commons
Attribution 4.0 International
Date: 3 March 2023

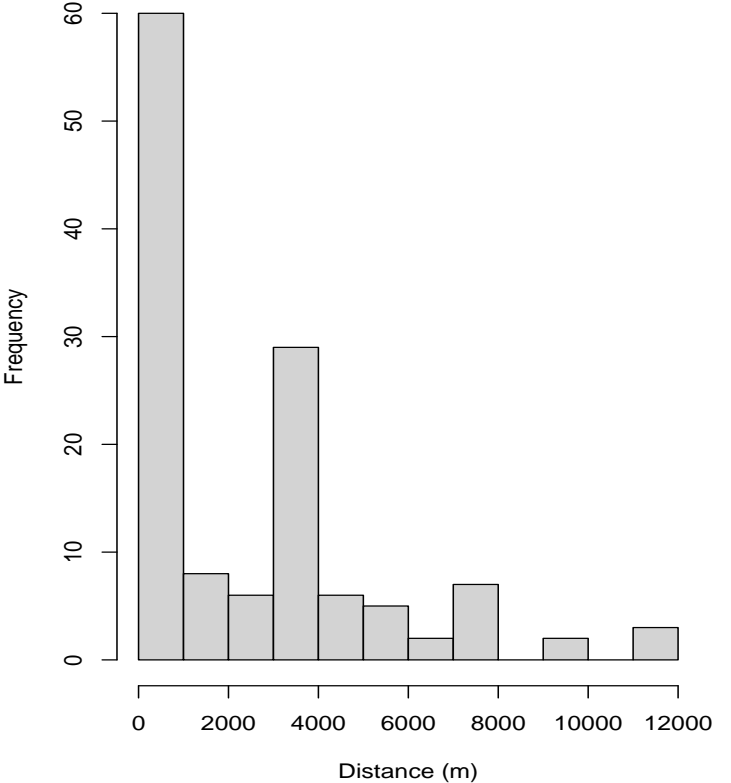
The information contained on this map has been prepared by Te Korowai o Waiheke. This map is illustrative only. Any application or reliance by another party is taken at the risk of that party. Information obtained from external sources is assumed to be correct and accurate at time of publication, unless due has been taken. Te Korowai o Waiheke is not liable or responsible for any inaccuracies, omissions, or errors resulting from data derived from external sources.



Genetic distance vs geographic distance



Histogram of distances between close kin pairs







September 2021 Litter #1



ID	Trap#	date	sex
ST_AKL_WI_179	1639	12/01/22	M
ST_AKL_WI_178	1259	3/02/22	F
ST_AKL_WI_188	1346	3/02/22	F
ST_AKL_WI_204	2012	19/04/22	F
ST_AKL_WI_126	1318	23/02/21	M

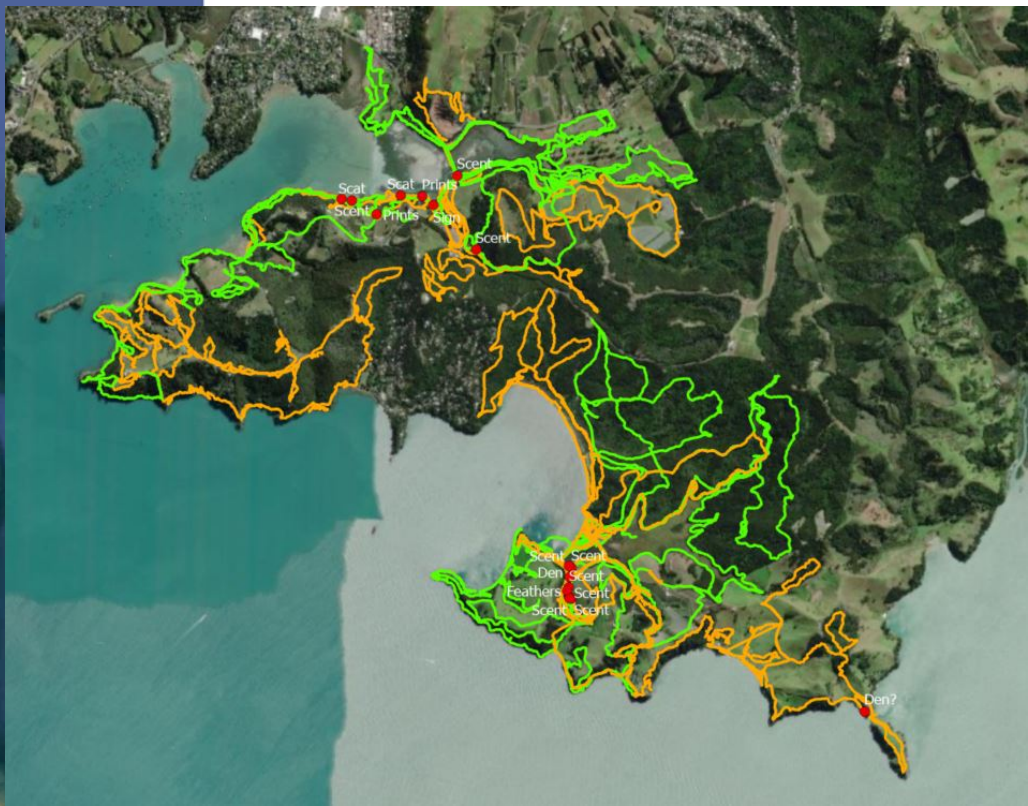
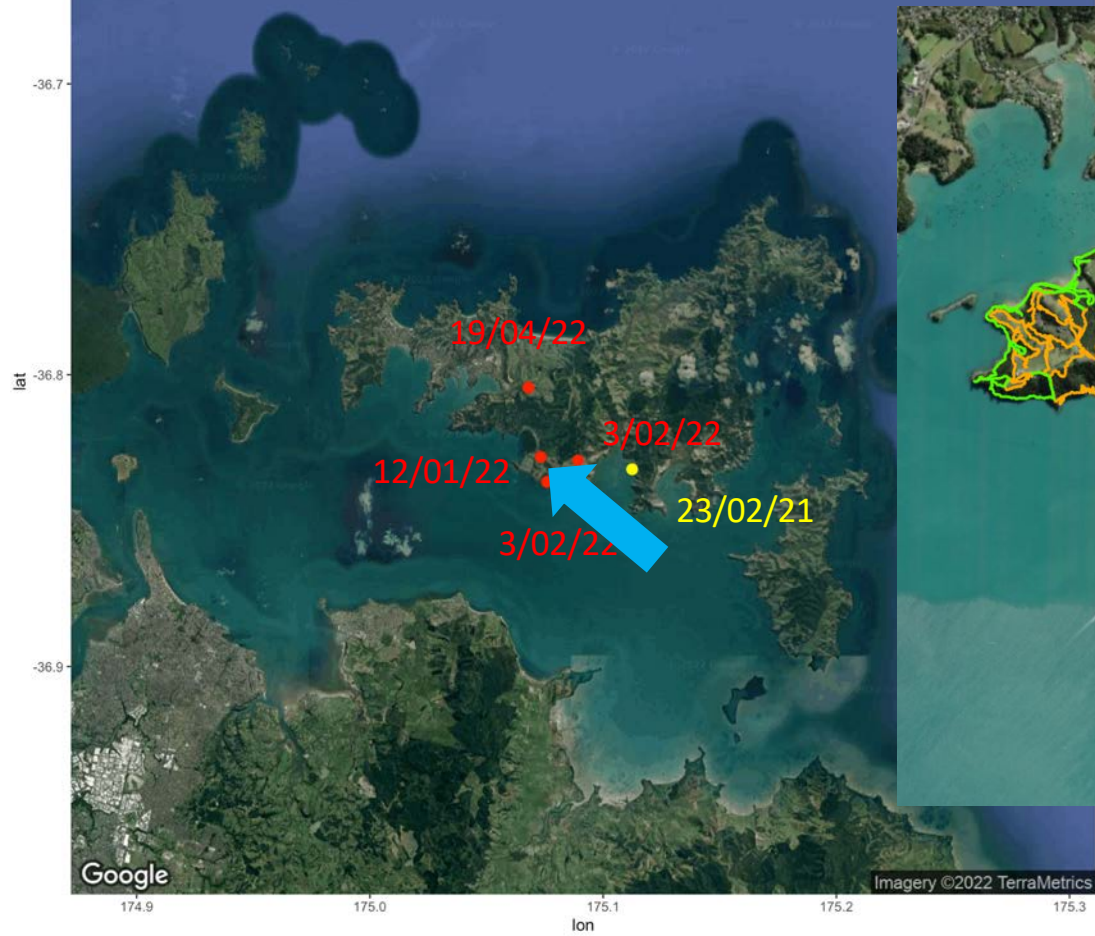
Father = ST_AKL_WI_126

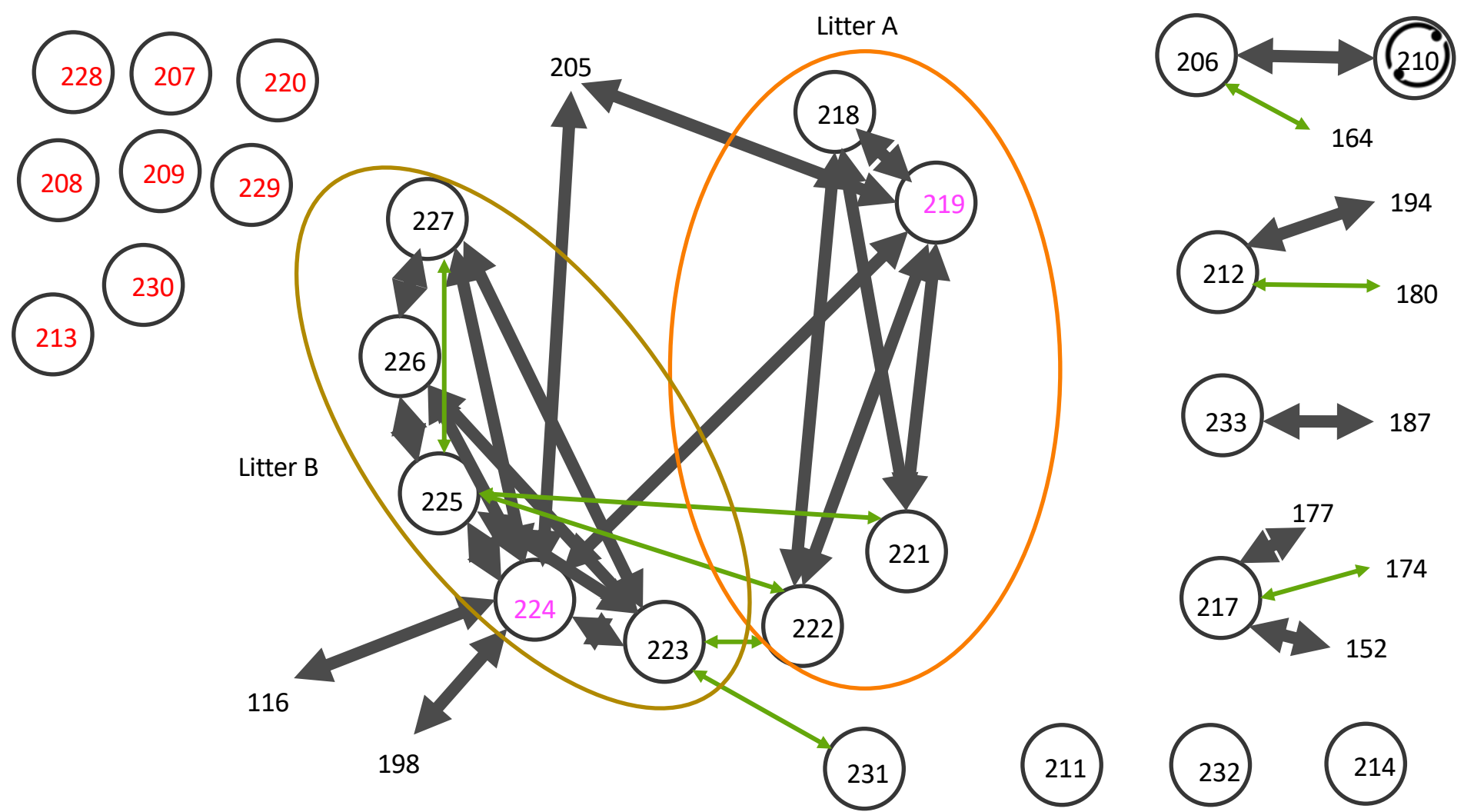
Mother ?????

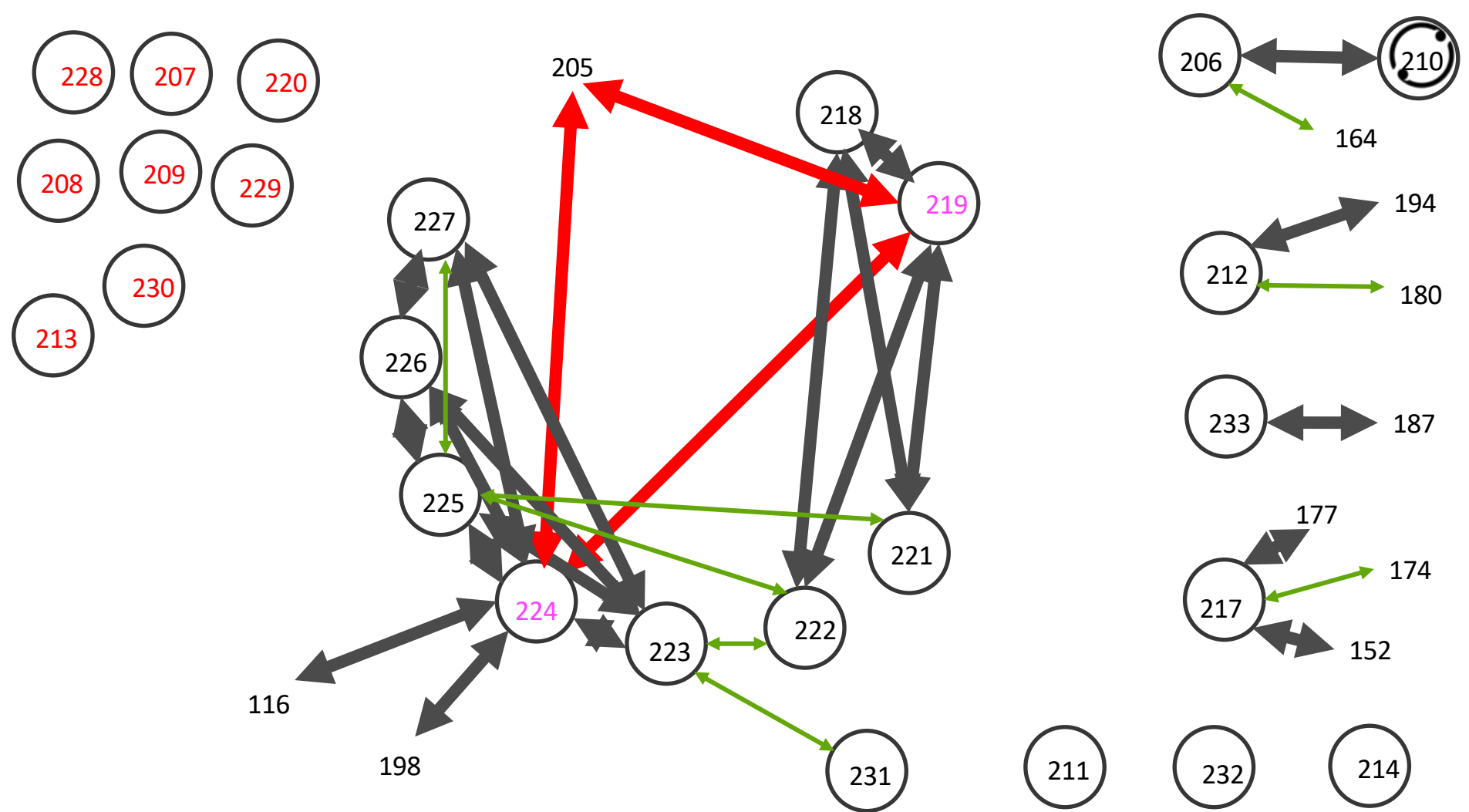


September 2021 Litter #1







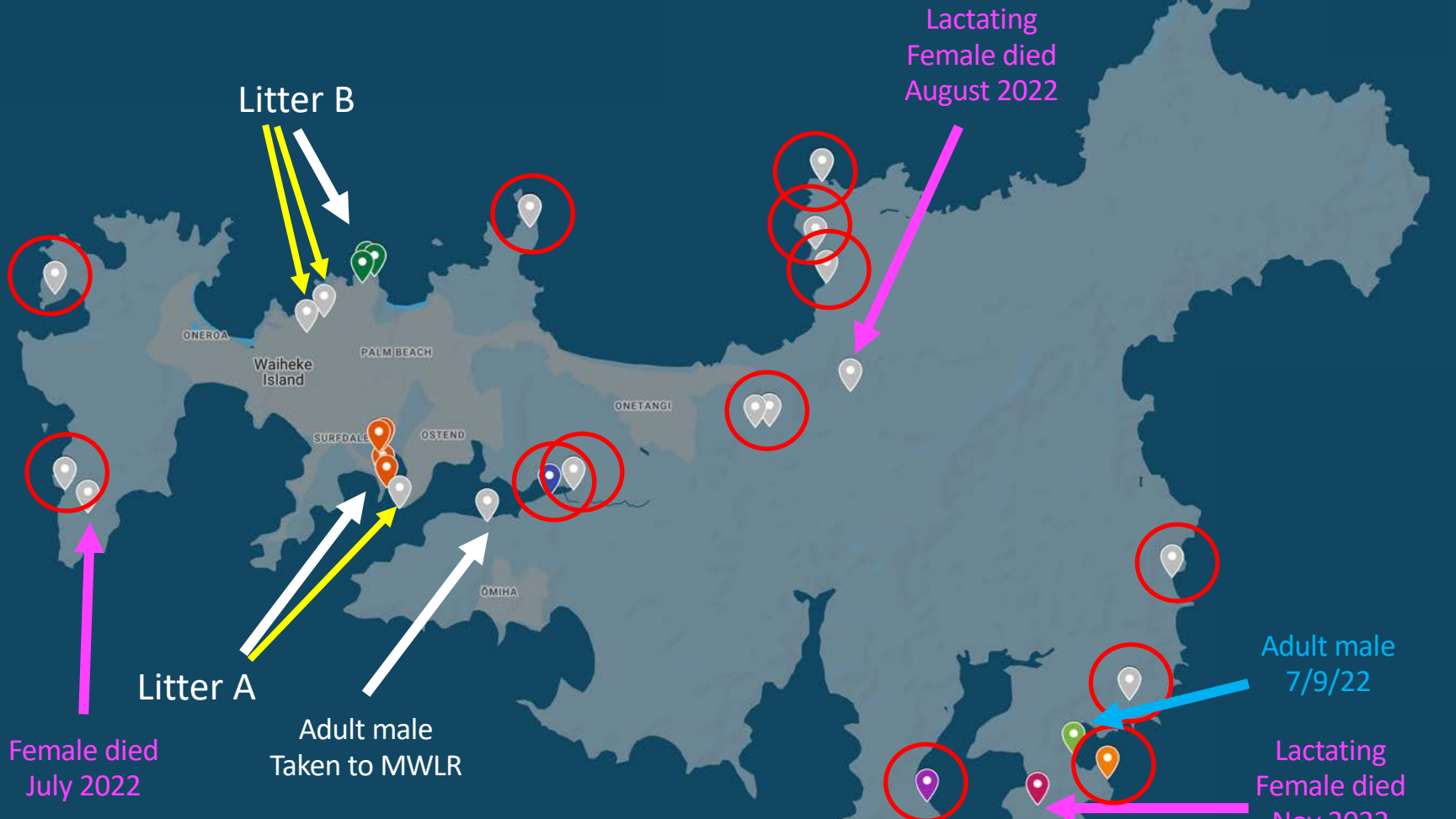


Litter B



Litter A





Litter B

Lactating Female died August 2022

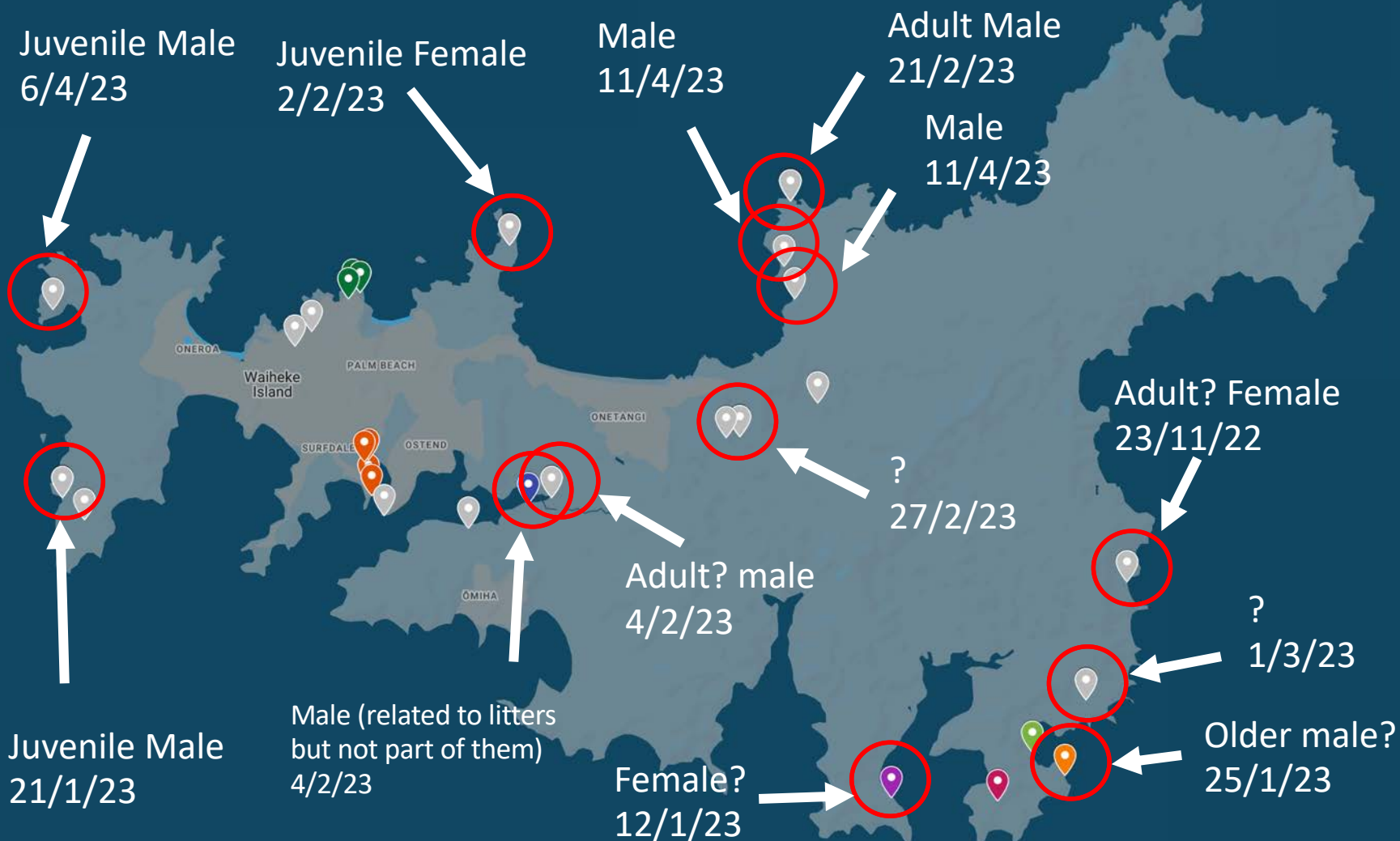
Litter A

Female died July 2022

Adult male Taken to MWLR

Adult male 7/9/22

Lactating Female died Nov 2022



Juvenile Male
6/4/23

Juvenile Female
2/2/23

Male
11/4/23

Adult Male
21/2/23

Male
11/4/23

Adult? Female
23/11/22

?
27/2/23

Adult? male
4/2/23

?
1/3/23

Juvenile Male
21/1/23

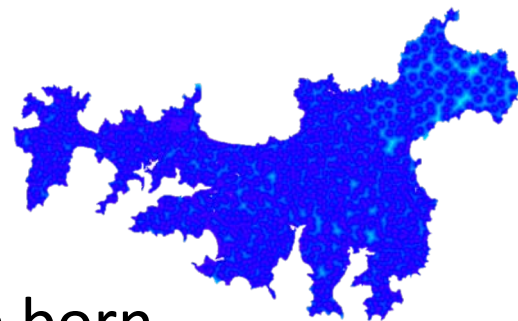
Male (related to litters
but not part of them)
4/2/23

Female?
12/1/23

Older male?
25/1/23

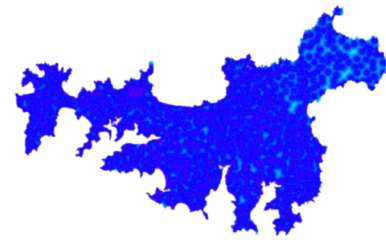


Waiheke summary



- Last year between 2 – 4 litters were born.
- Both males and females are avoiding trapping for over a year
- Given scent appears important, rub dead bodies (if fresh) on all nearby traps (after taking ears for me and freezing).
- They're close, but just like a condom, 90% still leads the same place as 0%.

Waiheke summary

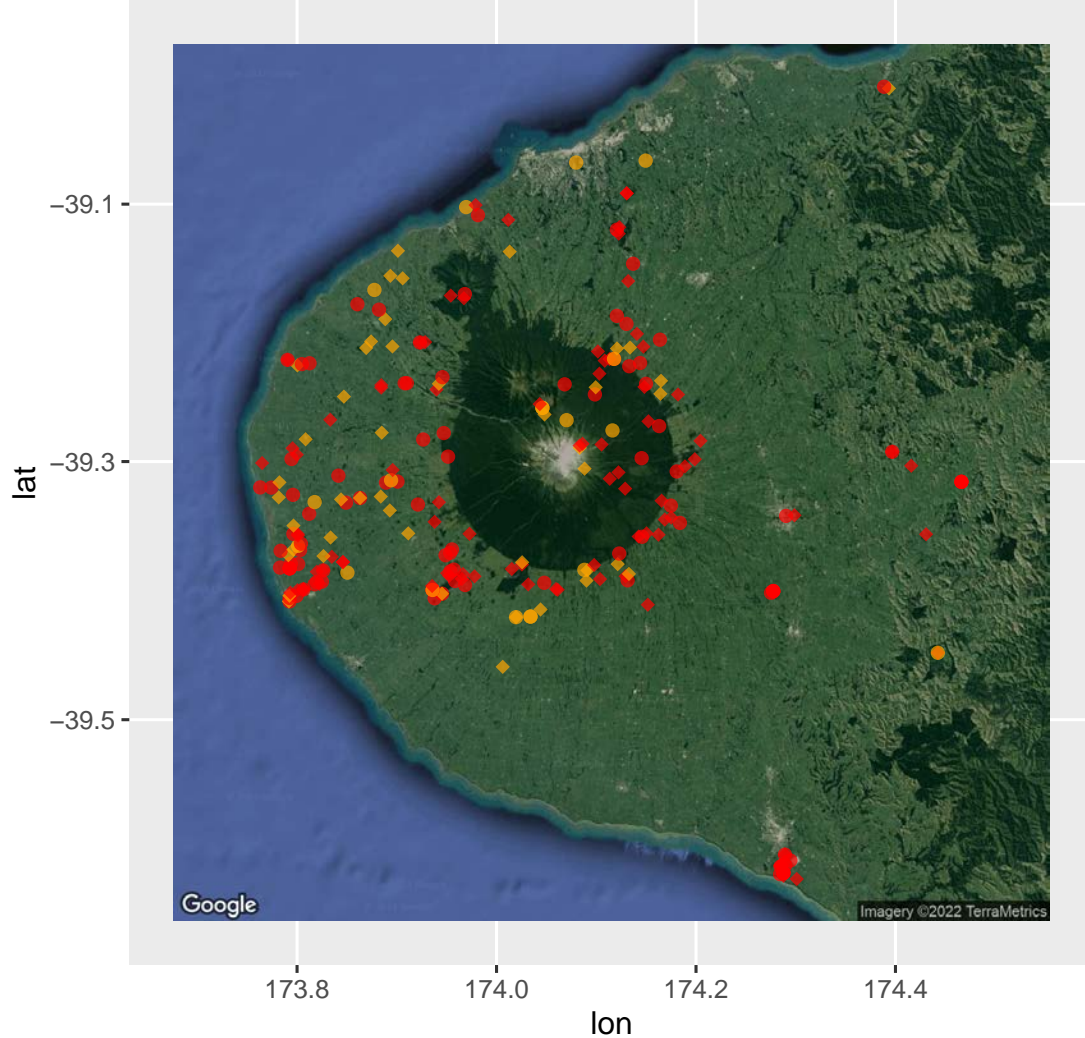


- I believe the Waiheke project proves that it is basically impossible to eradicate stoats without toxin...



Taranaki mustelids





	Stoats	Weasels
Male	96	46
Female	92	19



The two-tailed P value equals 0.7705



The two-tailed P value equals 0.0006

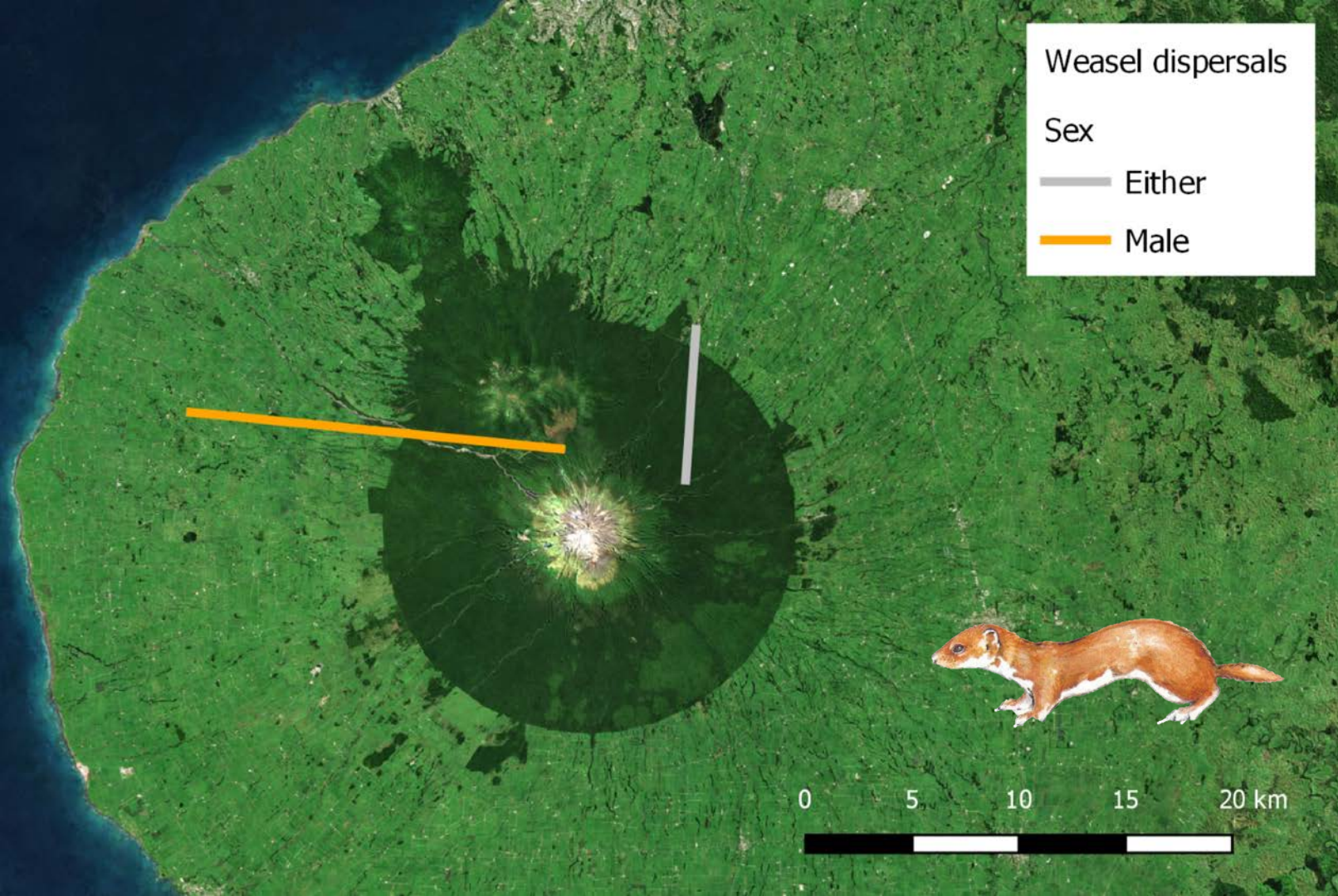


Weasel dispersals

Sex

— Either

— Male





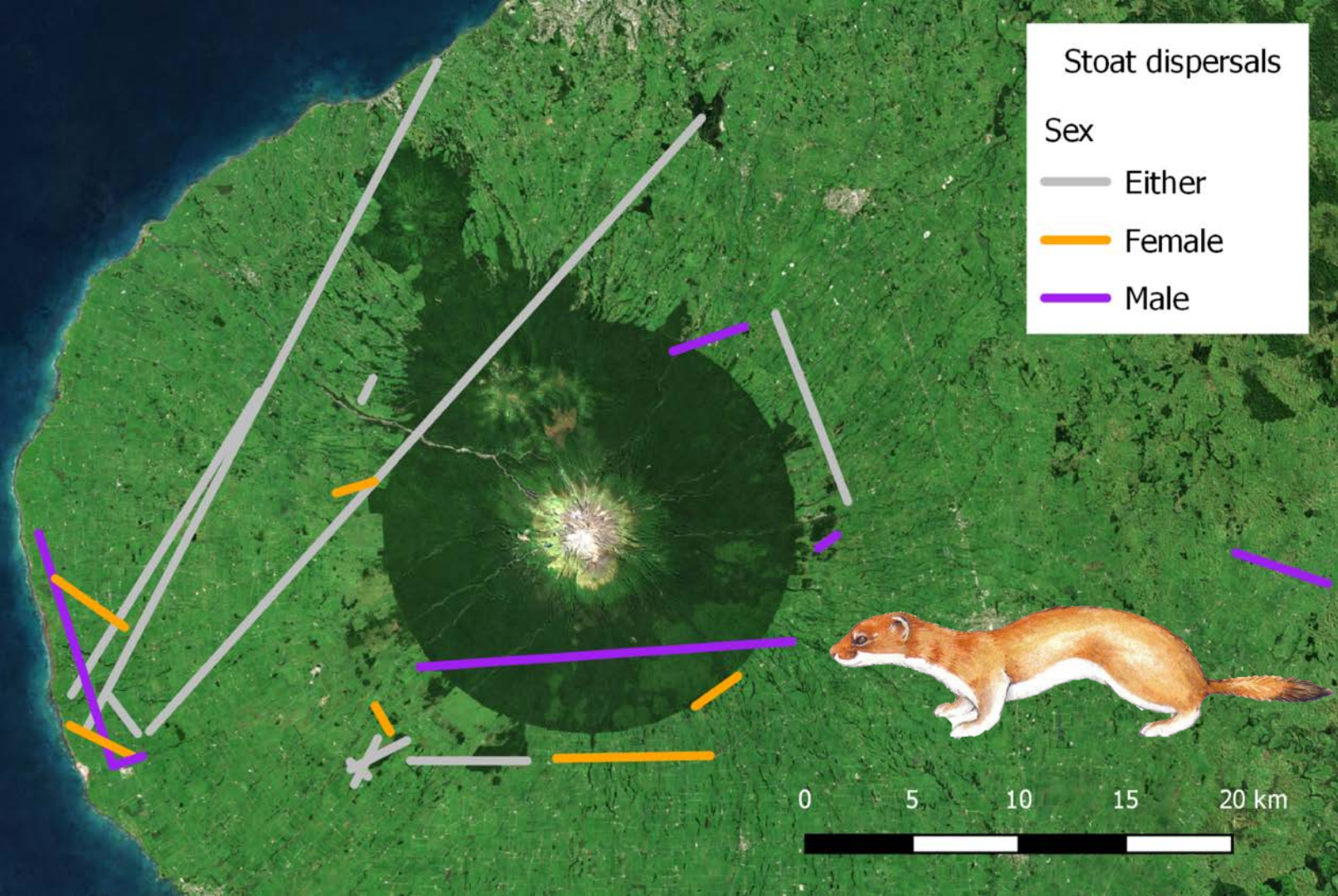
Stoat dispersals

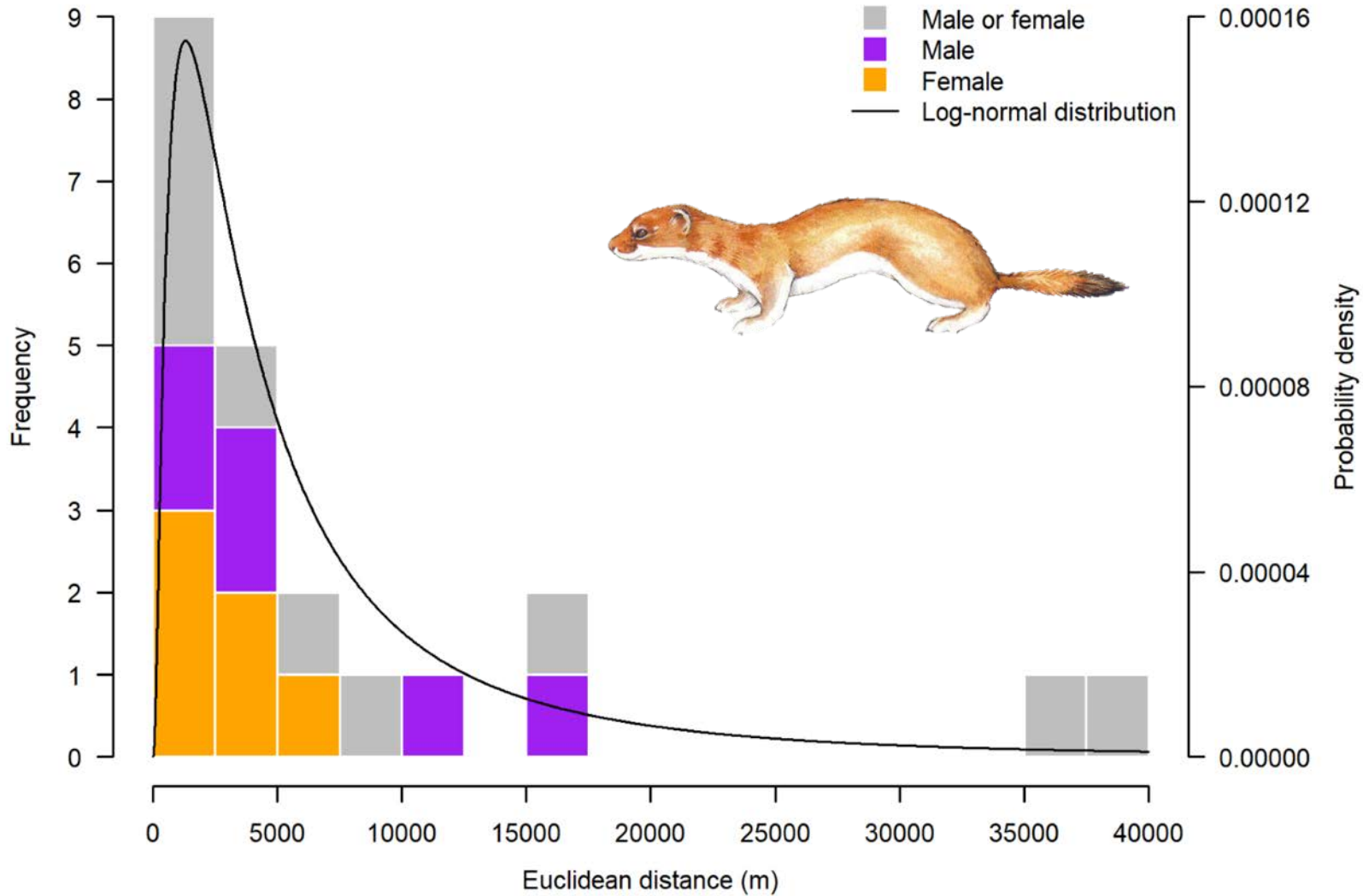
Sex

— Either

— Female

— Male





What about possums?



Please don't
make me run...

I'm not really
a swimmer...



Taranaki Taku Turanga

Towards
Predator-Free
Taranaki



latitude

-39.15

-39.20

-39.25

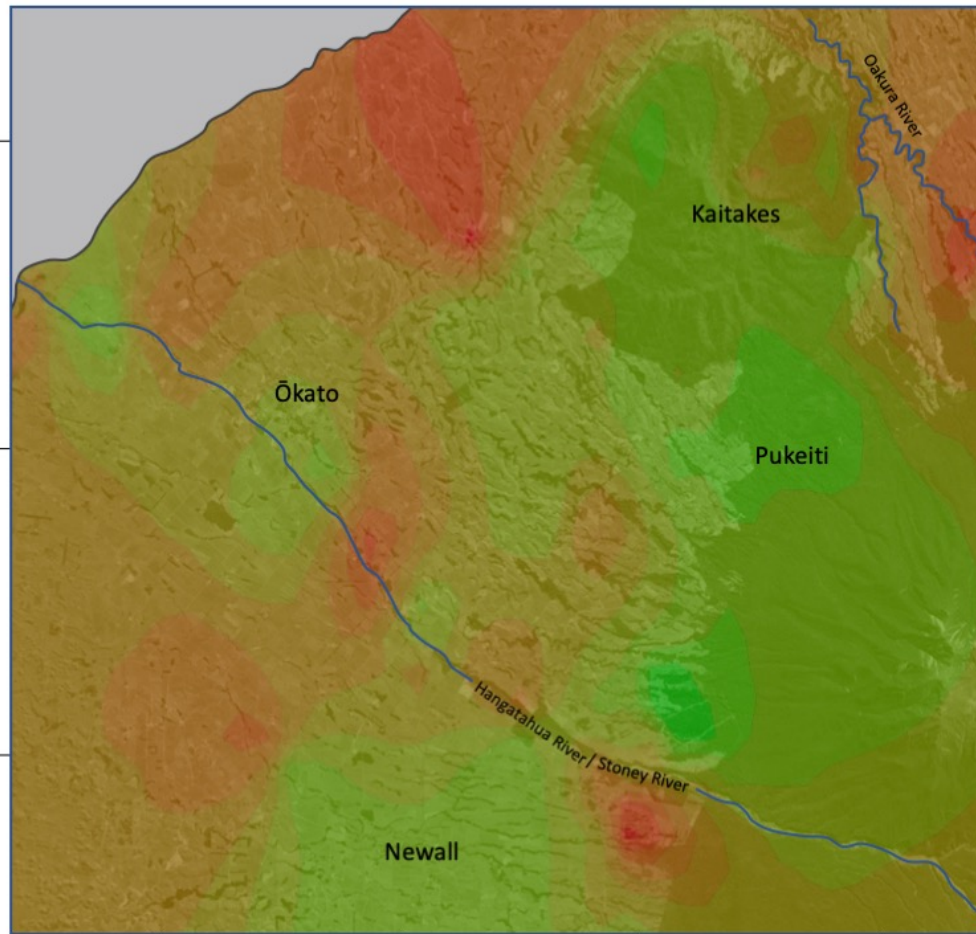
173.85

173.90

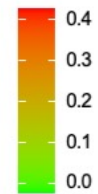
173.95

174.00

longitude



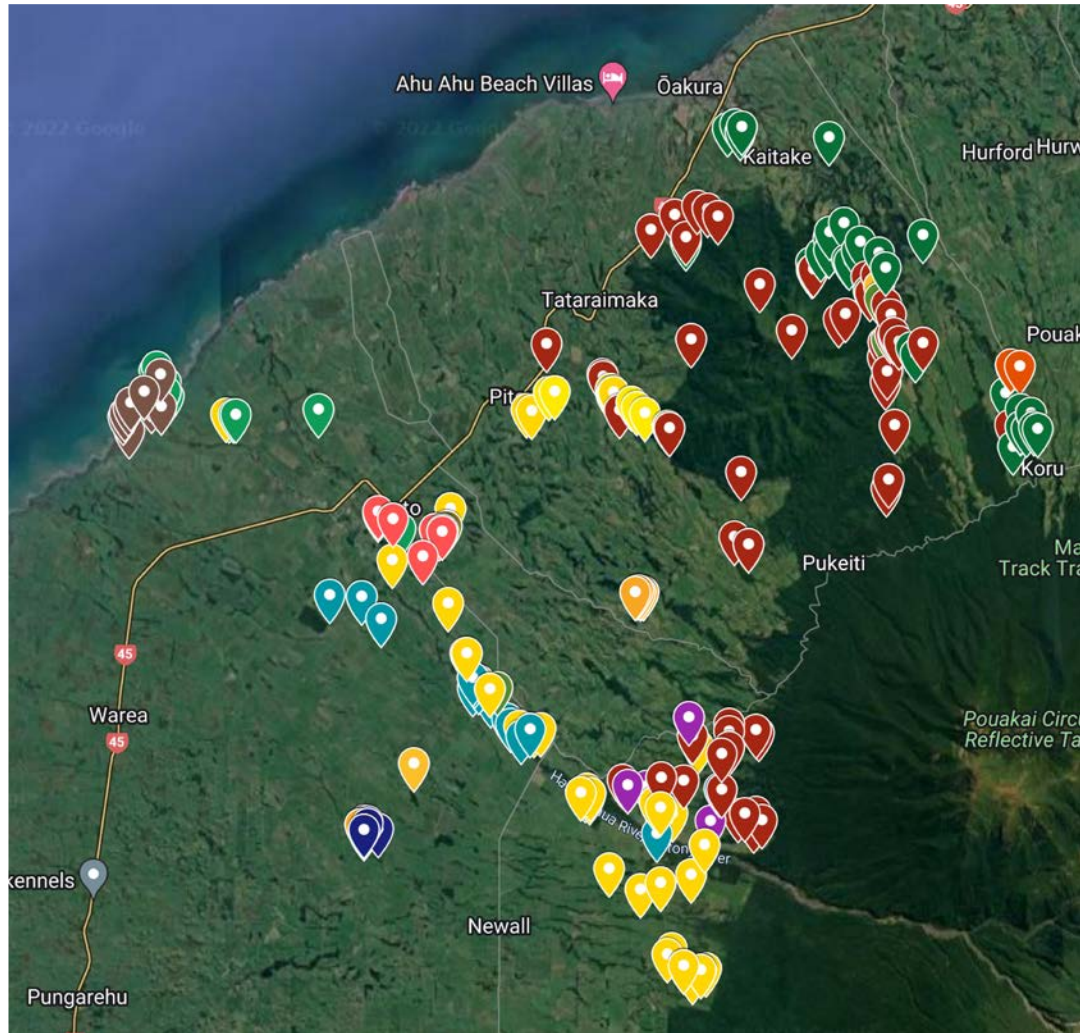
Inbreeding





Taranaki Taku Turanga

Towards Predator-Free Taranaki





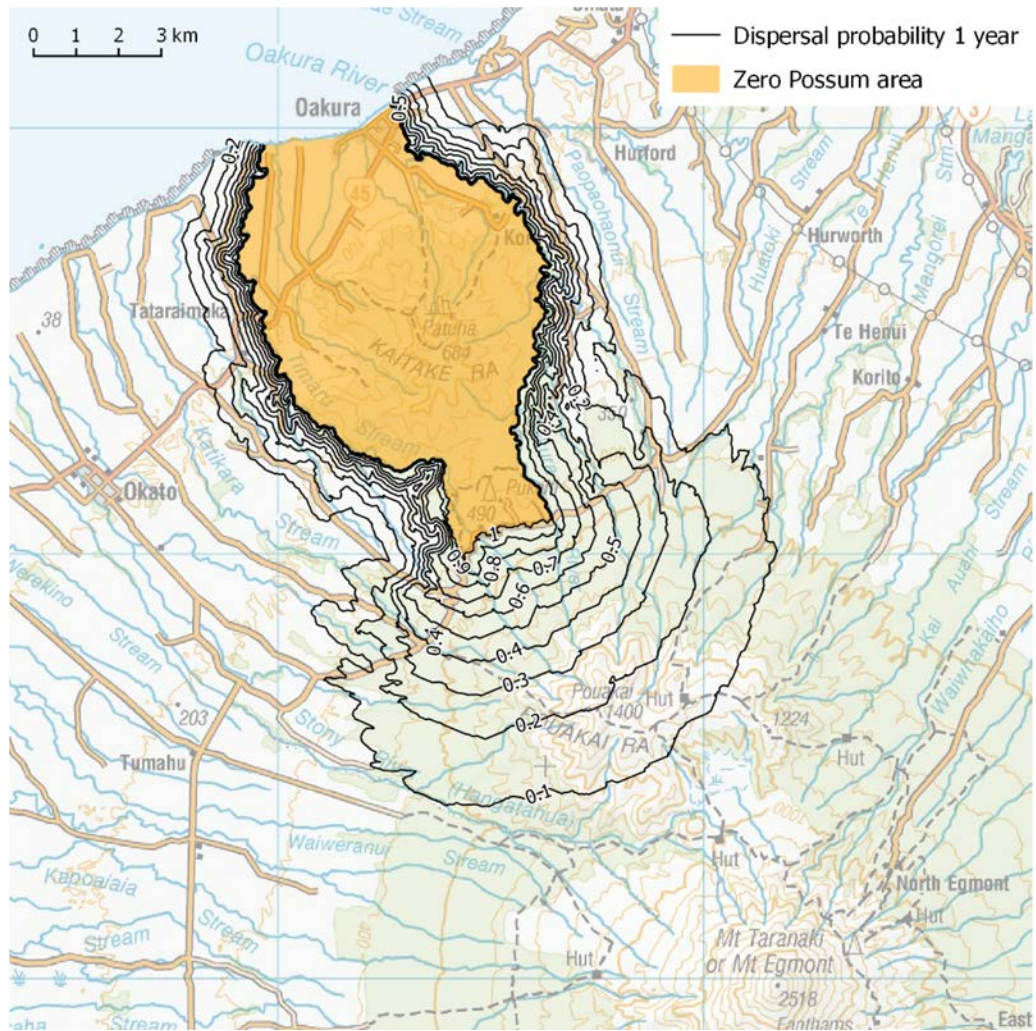
Taranaki Taku turang.
**Towards
Predator-Free
Taranaki**





Taranaki Taku Turangi

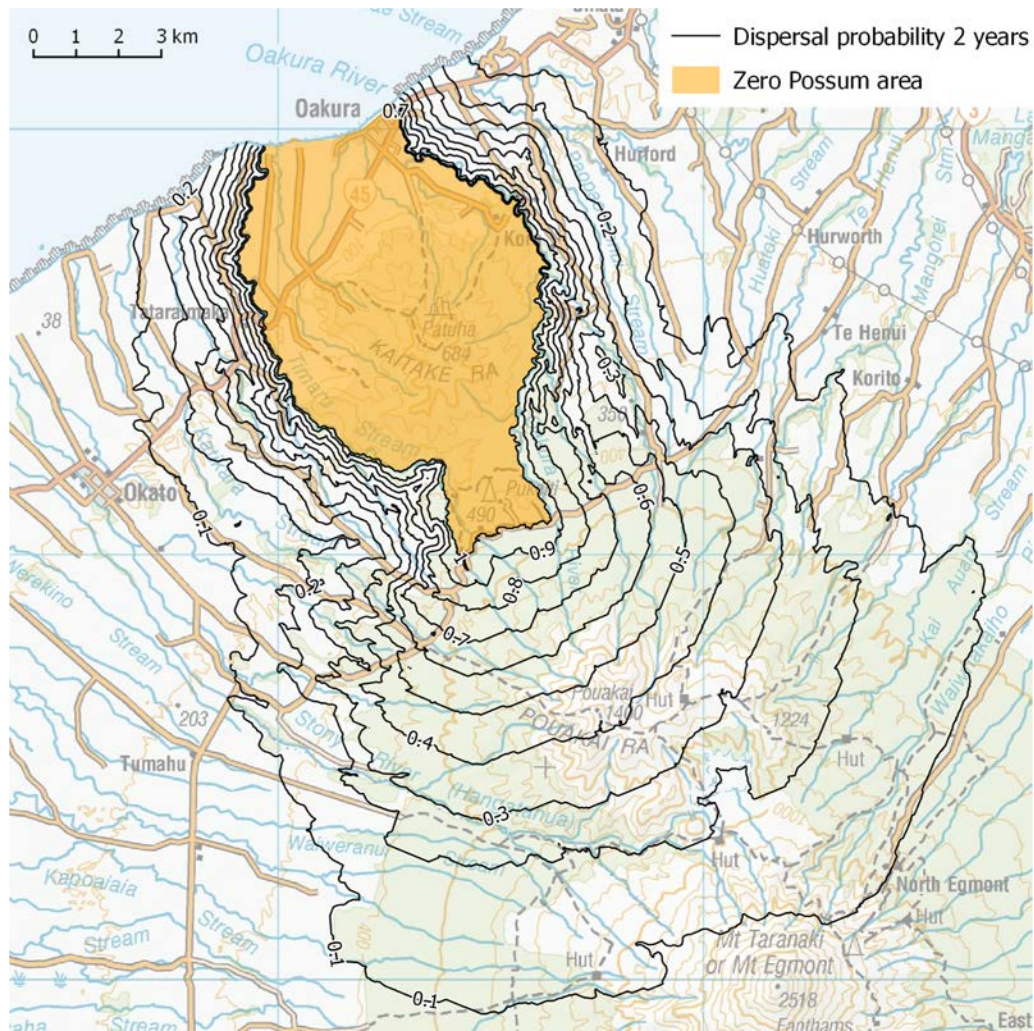
Towards Predator-Free Taranaki





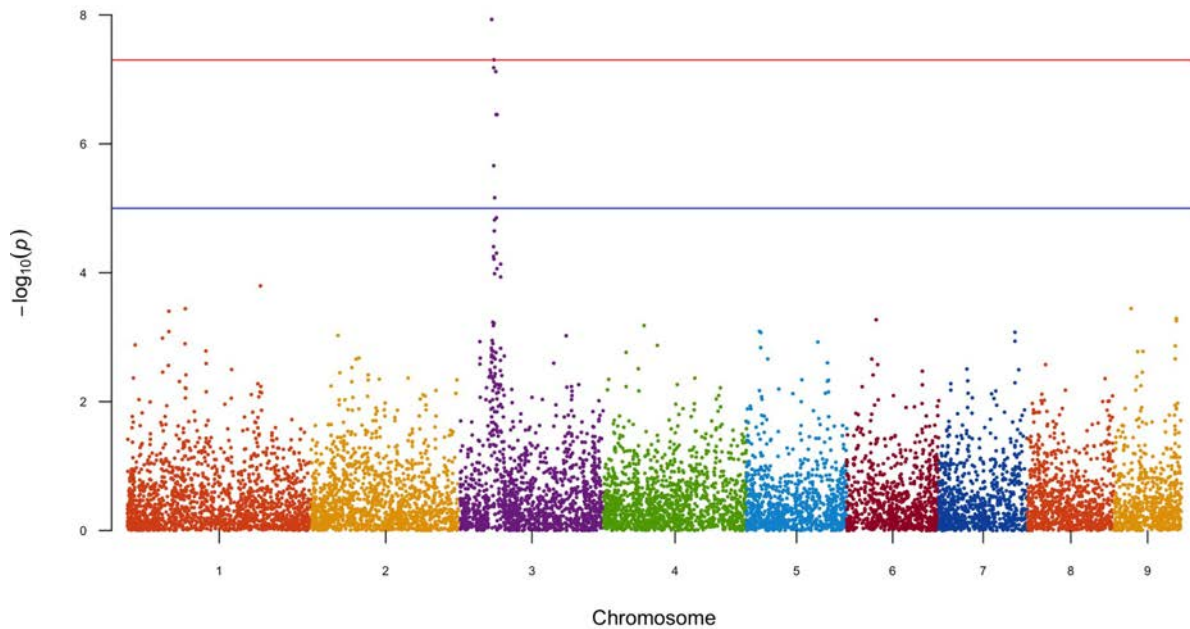
Taranaki Taku turangi

Towards Predator-Free Taranaki

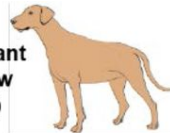




Agouti Signaling



Dominant Yellow (DY)



Shaded Yellow (SY)



Agouti (AG)

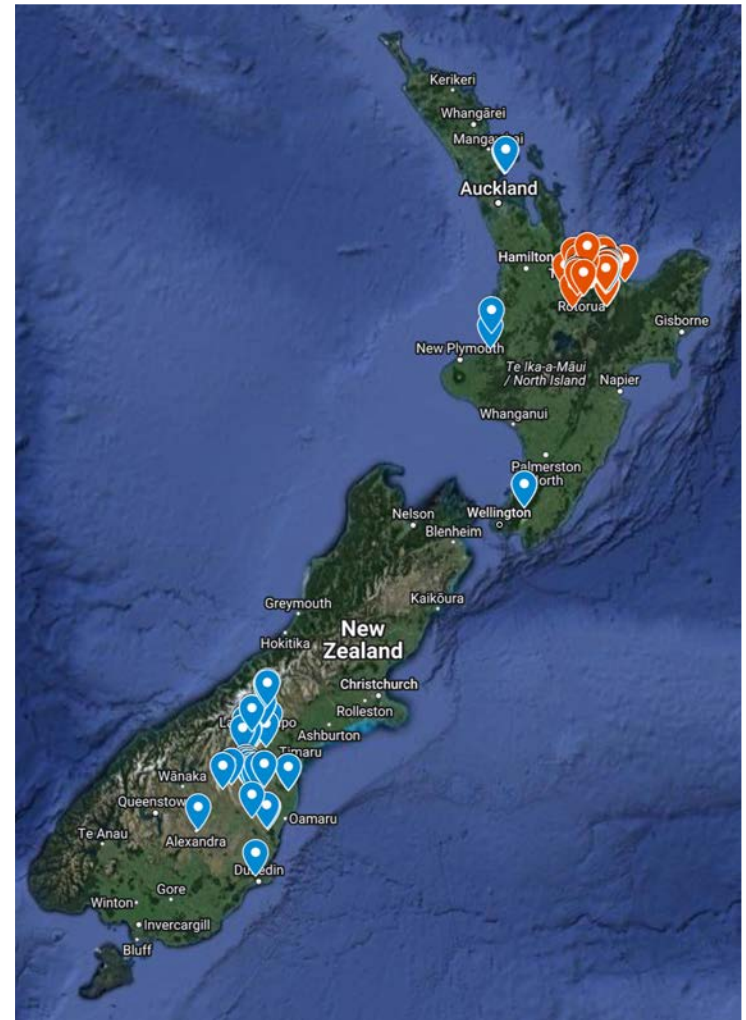


Black Saddle (BS)



Black Back (BB)







Acknowledgements

People:

- Jo Ritchie, Paul Kviecinskas, Frank Lepara, Mary Frankham et al at. TKOW
- Jordan Lasenby, Tim Sjoberg, Paul Prip, Toby Shanley, Sam Haultain
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- Matt Maitland, Emma Whitton
- Julia Allwood, Talia Bruv-Cubitt
- Tom Etherington, Andrew Gormley, Grant Norbury, Chris Niebuhr, Chris Jones, John Innes, Erica Hendrikse (MWLR)



Te Korowai o Waiheke
TOWARDS PREDATOR FREE WAIHEKE



Taranaki Taku Tūrangā
**Towards
Predator-Free
Taranaki**



Manaaki Whenua
Landcare Research



Thank you!!!

VealeA@landcareresearch.co.nz

